

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claim 18 has been canceled.

New claims 19 and 20 have been added.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-17, 19, and 20 are now pending in this application.

Rejections under 35 U.S.C. § 112

Claims 1-18 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant respectfully submits that the amendments to the claims render these rejections moot. Reconsideration and withdrawal of these rejections is respectfully requested.

Rejections under 35 U.S.C. § 103

Claims 1-6 and 9-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,562,507 to Cisar *et al.* (hereafter "Cisar"). This rejection is respectfully traversed.

Amended claim 1 recites a stack, comprising an impermeable metal structure, at least one first metal fiber layer, and at least one second metal fiber layer, said first metal fiber layer being sintered to a first side of said impermeable metal structure, said second metal fiber layer being sintered to another side of said first metal fiber layer opposite to the impermeable metal structure, wherein a planar air permeability of said stack is more than 0.02 l/min*cm, wherein

a porosity of said second metal fiber layer is less than 80%. Claims 2-6 and 9-17 depend from claim 1.

Cisar discloses a barrier and flow control device for electrochemical reactors that includes a flow field 102, a thin porous gas diffusion layer 104 sintered to the flow field 102, a membrane 106, and electrodes 108, 109. See col. 9, lines 1-13, 37-47, and Figures 13 and 15 of Cisar. Cisar discloses that the gas diffusion layer 104 can be made of sintering metal spheres or sintered metal felt. See col. 8, lines 39-54, and col. 9, lines 14-22, of Cisar. The Office identifies the flow field 102 as a first metal fiber layer and the gas diffusion layer 104 as a second metal fiber layer on page 5 of the Office Action.

However, Cisar discloses that the flow field 102 is made of expanded metal or porous foam. See col. 9, lines 1-7, of Cisar. Thus, the flow field 102 of Cisar is not a first or second metal fiber layer because expanded metal and porous foam are not made of metal fibers. Therefore, it would not have been obvious to modify the device of Cisar to provide the stack of claim 1 because Cisar fails to disclose or suggest all of the features of claim 1.

The Office argues on page 4 of the Office Action that because Cisar discloses controlling the size distribution of the metal spheres and controlling sintering conditions that the porosity of the gas diffusion layer can be controlled. See also col. 8, lines 39-45, of Cisar. However, this teaching of Cisar regards metal spheres, not metal fibers. Therefore, the teachings of Cisar do not form a basis that the porosity of a metal fiber layer, as recited in claim 1, is a result-effective variable that can be optimized because the teachings of Cisar regard a different structure than a metal fiber layer.

Claim 3 depends from claim 1 and is allowable over Cisar for at least the reasons discussed above. Claim 3 further recites “said first metal fiber layer having a porosity of more than 80%.” The Office argues on pages 5-6 of the Office Action that Cisar discloses a nickel foam with a density of 5%. However, a nickel foam is not a metal fiber layer. Therefore, it would not have been obvious to modify the device of Cisar to provide the stack of claim 3 because Cisar fails to disclose or suggest all of the features of claim 3.

Similarly to claim 3, claims 4-6 also recite properties of a metal fiber layer, which are not disclosed or suggested by Cisar. Therefore, it would not have been obvious to modify the device of Cisar to provide the stack of claims 4-6 because Cisar fails to disclose or suggest all of the features of claims 4-6.

Reconsideration and withdrawal of this rejection is respectfully requested for at least the reasons discussed above.

Claims 7 and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Cisar as applied to claim 1 and further in view of U.S. Patent No. 6,022,634 to Ramunni *et al.* (hereafter "Ramunni"). This rejection is respectfully traversed. Rumunni fails to remedy the deficiencies of Cisar discussed above in regard to independent claim 1, from which claims 7 and 8 depend. Reconsideration and withdrawal of this rejection is respectfully requested.

New Claims

New claims 19 and 20 have been added. Claims 19 and 20 depend from claim 1 and are allowable over the prior art for at least the reasons discussed above and for their additional respective recitations.

Conclusion

Applicant submits that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.


The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the

Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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